eSUM: european Safer Urban Motorcycling

OPEN DAYS
European Week of Regions and Cities

BRUSSELS, 6-9 October 2008
1. Consortium
2. Context, Project Objectives & Deliverables
3. Diagnosis of urban PTW road safety
4. Identification of best practice
5. Demonstration
6. Transfer of best practice
7. Upcoming Disemination
1. Consortium

- A consortium of urban and national authorities, PTW manufacturers and road safety investigators.
- Coordinated by Barcelona Municipality, eSUM develops best practice from the experiences of cities from 4 EU countries with high levels of PTW use and experience in developing good PTW road safety.
- EU manufacturers of innovative, safer PTW models (C1, MP3) participate along with ACEM
- Supported by subcontractors (CERTU, UK National Motorcycling Council, etc.) & pending external collaborations (Bast, accessory suppliers, etc. ...)
• Part-funded (50%) by EC Directorate General for Energy and transport (Road Safety & Accident Research):
  • 2,407,456 €
  • 30 months
  • Start date: 01-06-08
• In 2006, PTW users made up 19.7% of road fatalities

• PTWs account for 143,000M. pass-km (2.4%), but a higher % of passenger trips

• Urban situation: e.g. 15% of inner Paris traffic, 36% of fatalities (2007)
Motorcycling – 30 million users in EU 27

- Diversity of owners, purposes and products

ACEM’s park description
(ACEM’s) Market outlook

- 10 years outlook in million units: PTWs 35 (+13% vs. 2006)
- Scooters* (urban two-wheelers): 20 (+43% vs. 2006)
2. Project Objectives

- Identify, Develop and Demonstrate measures designed to deliver safer urban motorcycling, in the short, medium and longer term.

- Using an integrated approach, contribute to a steady decline in PTW user casualties in EU accident trends (currently PTW accident statistics buck the general positive downward trend):
  - Improved diagnosis
  - Identification of demonstrated best practice
  - Apply best practice in urban P2W Action Plans
  - Demonstrate Advances in the State-of-the-art
  - Promotion of rapid adoption of best practice
Description of the tasks

- **WP1** MANAGEMENT
  lead BCN mun – contributing DSD

- **WP2** DIAGNOSIS
  lead ATAC – contributing BCN mun; Tfl; MdP; ACEM; Uni FIR

- **WP3** IDENTIFICATION OF BEST PRACTICES
  lead Tfl – contributing ACEM

- **WP4** STATE-OF-THE ART; DEMONSTRATIONS
  lead BCN mun – contributing DSD

- **WP5** MONITORING, EVALUATION, SYNTHESIS
  lead Uni ATH

- **WP6** TRANSFER AND CONSUMER INFORMATION MATERIALS
  lead ACEM

- **WP7** DISEMINATION
  lead BCN mun
• D7.1 Website
• D2.1 eSUM Diagnosis of Urban Motorcycling Safety
• D3.1 Best Practice Guidance for Improving Urban P2W Safety
• D4.1 Demonstrations for Improving Urban P2W Safety
• D7.2 eSUM Mid-term workshop
• D5.1 Potential Impacts for Improving Urban P2W Safety
• D6.1 Downloadable promoting safer P2Ws models and features on European City Streets
• D7.3 eSUM Final Conference
• D1.1 Final Report
3. eSUM diagnosis of urban PTW road safety

WP3 activities comprise:

- In-depth investigation of urban cases (MAIDS accident database & local studies by core cities partners)
- In-depth investigation of national accident databases
- Benchmarking PTW urban road safety of participating cities (in-depth for core cities, lighter for transfer cities)
National motorisation indices puts on favourably place Italy, but city fatalities tell a different story
Urban accidents comprise an part of the 921 accident cases recorded in the MAIDS (5 countries*, 2000 variables) database. The analysis examines:

- **a) Where and when urban accident occur:**
  - Analysis of variables describing the time and location of the accidents, such as time of day, day of week, illumination, intersection type, road condition and defect, traffic signs, etc. In this section variables such as origin and destination of the trip, trip length, frequency of use and length ridden since departure would be included.

- **b) Who and what kind of vehicle is involved:**
  - Analysis of variables describing the rider/driver characteristics, such as age, occupation, vehicle experience, previous accidents and violations, number of days ridden yearly, training, etc. In this section also the type of vehicle involved would be described, such as PTW style, PTW displacement, vehicle gross mass and OV size/classification.

- **C) How and why urban accidents occur**
  - Analysis of the variables that can describe the dynamics of the accident events and the possible accident causes. In this section selected variables could be analyzed, such as attention to driving/passenger tasks, stress experienced that day, and transient physiological impairment.

* IT, FR, DE, ES & NL
Example of Barcelona

“A+ study” of PTW accidents:

• Uses 5 years’ data (2000 – 2004) to identify main accident types
  - Red-light jumping
  - Incorrect turns in wide streets
  - Passing between vehicles in heavy traffic
  - General disregard of traffic regulations

• Analyses specific risks using video & simulation
International investigation of safer / other PTW models’ participation in accidents

- What evidence exists (that these models are safer)?

- Concerning the analysis of P2W models, where the number of cases is limited by the short time in circulation (e.g. Piaggio’s MP3) data is collected for additional cities with high model sales.

- BMW’s C1 model – the only PTW designed from crash-worthiness design principles. 30,000 units sold since 1990s. The proposed retrospective analysis considers accident data from different countries (Spain & Germany &…), comparing C1 against similar cc model performance in urban (and interurban) areas.

- Are any alternative=?
For the core cities (Barcelona, London, Paris & Roma):
- Definitions and accident reporting process
- Accidents and accidents with a PTW involved: number of fatality accidents, killed and serious injured (KSI) accidents and total accidents.
- Types of accidents, accident blackspots inventory
- Number of killed, seriously injured and slightly injured.
- Driver’s age
- Vehicle-kilometres by type vehicle
- Population by age group
- Number of motorcycles
- Driver licenses Legislation: minimum age, speed limit, compulsory test (theoretical and/or practical), compulsory helmet, alcohol limit, etc.
- History of key actions (Enforcement, Awareness campaigns..)
- Relationships with mobility & structural characteristics of the cities
• ATAC is leading the current proposal.
• The group must improve more. In addition to general data, road safety details, mobility and network data are required, with separate moped / MC analysis.

### Background 2006 or 2007

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<th>Parameter</th>
<th>2006</th>
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<td>Road network length (Km)</td>
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<td>Veh*km (*100 million)</td>
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### Indicators 2006 or 2007

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<td>Density (A3/A4)</td>
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<td>Car per inhabitant (A8/A3 *1.000)</td>
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<td>Mortality rate (A13/A3* 100.000)</td>
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<td>Fatality rate (A13/A6* 10.000)</td>
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<td>Fatality risk (A13/A15)</td>
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<td>Death rate (A13/A12*1.000)</td>
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### Number of motorcycles & mopeds

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<thead>
<tr>
<th>Año</th>
<th>Motorcycles (*1000)</th>
<th>Mopeds (*1000)</th>
<th>All Vehicles (*1000)</th>
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### Population (*1000)

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<tr>
<th>Año</th>
<th>City</th>
<th>Metropolitan area</th>
<th>Metropolitan region</th>
<th>City: 15 - 17</th>
<th>Share</th>
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### Motorcycles & mopeds per inhabitant

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Benchmarking: transfer cities

Core country Transfer cities:

- Madrid (ES)
- ... (GB)
- ... (FR)
- ... (IT)

- Comparisons based on a basic common dataset, consistent with the POLIS Urban Road Safety Initiative

- Together, the benchmarking must facilitate the identification of best practice
eSUM offers an open initiative to EU cities, to improve PTW accident data recording procedures, to build an EU-urban database study tool. As well as a Haddon approach for action evaluation:

<table>
<thead>
<tr>
<th>eSUM actions framework</th>
<th>Driver</th>
<th>Vehicle</th>
<th>Infrastructure</th>
<th>Regulation &amp; Enforcement</th>
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<tr>
<td>Preventing collision</td>
<td>BP1</td>
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<td>BP2</td>
<td>BP3</td>
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<td>Avoiding accident</td>
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<td>Reducing severity</td>
<td>BP5</td>
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<td>BP6</td>
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- BP1: Preventing collisions by Driver Training together with Behaviour Campaigns
- BP2: Preventing collisions by Street & Traffic Management Design
- BP3: Preventing collisions by high levels of targeted enforcement
- BP4: Avoiding accidents through specific P2W blackspot remedial programmes
- BP5: Reducing injury severity by Improved P2W vehicles (design & protective devices)
- BP6: Reducing injury severity by reducing & softening street furniture
Establishing accident reduction targets

Recommended as best practice by WHO and other reference organisations...

Do the eSUM urban authority partners have specific accident reduction targets? Is the PTW problem specifically addressed?
Reducing injury severity can be achieved by enforcing a high usage of helmets by drivers. The relatively good performance of Catalonia in the South-group PTW analysis is at least partly attributable to the greater impact of the urban enforcement effort led by the city of Barcelona.
BP1: Preventing collisions by Driver Training + Behaviour Campaigns

- TfL lead: rise in PTW registrations after congestion charging continues but the trend of increasing PTW accidents (victims killed and injured) has been returned to early '90s level thanks to combination of driver training + awareness campaigns ... TfL to articulate latest plans for corporate training
Thoughts for Identifying Best Practice

BP2: Preventing collisions by Street & Traffic Management Design

- Use of bus lanes: compare Bcn and Paris prohibitions with TfL’s trial results
- Paris: recognition of riding between streams of car traffic; conditions in Charter of March 2007; One day PTW experiences for city planners, report of first trials
- Good PTW parking practice; Paris’ Charter defines it

BP3: Preventing collisions by high levels of targeted enforcement

- Collisions that can be enforced are red-light jumping, can we collect before / after data of accidents for sites with installed cameras?
Thoughts for Identifying Best Practice

BP4: Avoiding accidents through specific P2W blackspot remedial programmes
  • Can we define & collect data? Report Bcn experience (Local Police)... Other core cities?

BP5: Reducing injury severity by Improved P2W vehicles (design & protective devices)
  • UniFir lead: synthesis of state-of-the-art
  • Piaggio: of the various safety features demonstrated with MP3, what will be offered to MP3 hybrid customers?
  • BMW: short report on crashworthiness testing for PTWs

BP6: Reducing injury severity by reducing & softening street furniture
  • Report Bcn inventory (Local Police)
Identifying (& reporting) Best Practice

Advancing this WP will help ensure interaction with data collection & benchmarking

Does this cover all elements? What about BP for data collection? and staff organisation?, & charter approach for involving actors?

A TEMPLATE for URBAN MOTORCYCLING ACTION PLAN
5. Demonstrating innovation & best practice

<table>
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<tr>
<td>Preventing collision</td>
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<td>D1</td>
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<tr>
<td>Avoiding accident</td>
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<tr>
<td>Reducing severity</td>
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<td>D3</td>
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- **D1.** Preventing collisions by Street & Traffic Management Design
- **D2.** Preventing collisions by automated (ITS) enforcement of P2W violations
- **D3.** Reducing injury severity by promotion of safer P2W vehicles and features
- **D4.** Preventing collision by Enhanced Training and Awareness Campaigns
eSUM manufacturers are developing electric / hybrid versions of safe models - how do eSUM cities propose to promote their implementation / maximise their penetration in the city P2W stock?

Possibilities under consideration include:
- Exemption from bus lane restrictions for electric / hybrid PTWs (Paris lead)
- Promotion of recharging points (London to adapt initiative established for 4-wheeled vehicles?..)
- Bcn (Municipality with BSM): Use of safer & cleaner PTWs by traffic police + PTW recharging /battery exchange at network of car parks / preferential on-street parking
- Lower vehicle tax (which cities impose local taxes?) according to emissions..

More ideas?
- More intelligent helmet (lights)..?
D3. Reducing severity by promoting safer P2W vehicles & features

- What? EXACTLY, can the eSUM PTW manufacturers offering?
- Do electric / hybrid PTWs have safety weakspots?

ABS (>500cc? does this exclude the C1 and MP3?), ecall*, helmet advisors, cars with collision-avoidance ISA, external air-bags

Event recorders, alcoholock + adaption of points driver licence for PTWs...

- How many vehicles? For how long? For all sites?
Advanced stop lines: report Bcn trials against other trials

3 sites
2 trial phases
Phase 1: physical only, May-Sept ’08
Phase 2: physical & signal timings, tbd

New markings & layouts for circulating traffic; Paris trial, others?

Comment: may be difficult to obtain conclusive, spectacular results …
D2 & D4 Demonstrations

• **D2. Preventing collisions by automated (ITS) enforcement of P2W violations**

  BCN lead

• **D4. Preventing collision by Enhanced Training and Awareness Campaigns**

  TfL lead developing corporate best practice
6. Transfer of Best Practice

• Mechanism for transfer being linked to POLIS initiative

• Question of City Size: will BP of larger cities be transferable to medium-sized cities?

• Active transfer cities (i.e. those providing POLIS data) could be invited to comment on draft of best practice report, and to extend the collection of the PTW data to cover the eSUM benchmarking template, and to participate in a workshop to discuss the concept of EU-city collaboration to build a PTW accident database....
### 7. Upcoming dissemination

- Web Page

- Open Days, Brussels  Oct 6-9

- Paris, EU Road safety day; Oct 13

- Barcelona, POLIS Nov 25/26 BcnMun / ACEM /

- Brussels, ACEM Annual conference Dec 1
For more information:

esum.eu

Thanks for your attention!